

*This listing of claims will replace all prior versions, and listings, of claims in the application:*

**Listing of Claims:**

---

**Claims 1-11 (Canceled).**

**Claim 12 (Original):** A particle deposition system, comprising:

- a deposition chamber having an inlet;
- a conduit coupled to the inlet of the deposition chamber, the conduit being in flow communication with a source of gas containing particles, and the conduit having a first branch and a second branch;
- a particle counter disposed in the first branch of the conduit;
- an orifice disposed in the second branch of the conduit; and
- a vacuum coupled in flow communication with the first branch of the conduit and the second branch of the conduit.

**Claim 13 (Original):** The system of claim 12, wherein the first branch of the conduit is closer to the source of gas containing particles than the second branch of the conduit.

**Claim 14 (Original):** The system of claim 12, further comprising:

- a first solenoid disposed in the first branch of the conduit between the particle counter and the vacuum; and
- a second solenoid disposed in the second branch of the conduit between the orifice and the vacuum.

**Claim 15 (Original):** The system of claim 14, further comprising:

an orifice disposed in the first branch of the conduit between the particle counter and the first solenoid.

**Claim 16 (Original):** The system of claim 12, wherein the source of the gas containing the particles is an atomizer.

**Claim 17 (Original):** The system of claim 16, further comprising a differential mobility analyzer in flow communication with the atomizer.

**Claim 18 (Original):** The system of claim 17, further comprising an orifice disposed before the differential mobility analyzer and an orifice disposed after the differential mobility analyzer.

**Claim 19 (Original):** The system of claim 18, further comprising a first pair of pressure sensors for measuring a pressure differential across the orifice disposed before the differential mobility analyzer and a second pair of pressure sensors for measuring a pressure differential across the orifice disposed after the differential mobility analyzer.

**Claim 20 (Original):** The system of claim 12, wherein the conduit has a third branch, the third branch being in flow communication with the vacuum.

**Claim 21 (Original):** The system of claim 20, further comprising:  
an orifice disposed in the third branch of the conduit.

**Claim 22 (Original):** The system of claim 21, further comprising:

a third solenoid disposed in the third branch of the conduit between the orifice and the vacuum.

**Claim 23 (Original):** The system of claim 12, wherein the conduit is in flow communication with a source of makeup gas.

**Claim 24 (Original):** A particle deposition system, comprising:

an atomizer for providing a flow of gas containing particles;

a flow control device coupled in flow communication with the atomizer;

a differential mobility analyzer coupled in flow communication with the flow control device; and

a deposition chamber coupled in flow communication with the flow control device and the differential mobility analyzer, wherein when the particles in the flow of the gas containing the particles are to be filtered by the differential mobility analyzer, the flow control device directs the flow of the gas containing the particles toward the differential mobility analyzer, and when the particles in the flow of the gas containing the particles are not to be filtered by the differential mobility analyzer, the flow control device directs the flow of the gas containing the particles toward the deposition chamber.

**Claim 25 (Original):** The particle deposition system of claim 24, wherein the flow control device is a three-way solenoid.

AI  
checked

**Claim 26 (Original):** The particle deposition system of claim 24, wherein when the particles in the flow of the gas containing the particles have a size that is not larger than 1.5 microns, the flow control device directs the flow of the gas containing the particles toward the differential mobility analyzer, and when the particles in the flow of the gas containing the particles have a size that is larger than 1.5 microns, the flow control device directs the flow of the gas containing the particles toward the deposition chamber.

---